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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,495	10/28/2003	Alan Benson Norman	030627/253135	8177

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ALSTON & BIRD LLP  
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101 SOUTH TRYON STREET, SUITE 4000  
CHARLOTTE, NC 28280-4000

EXAMINER
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CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1731

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/695,495

Applicant(s)

NORMAN ET AL.

Examiner

Dennis Cordray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-212 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

Applicant's amendments filed 12/18/2006 have overcome the rejection of claims under 35 U.S.C. 102(b) over Drake et al. Applicant's arguments regarding the outstanding rejections under 35 U.S.C. 103 have been fully considered but they are not persuasive.

Applicant argues that Drake would not have been motivated or have found it obvious to configure the analyzer to determine the diffusion coefficient. Drake does not reveal the method, hand calculation or automated calculation, used to determine the diffusion coefficient of the wrapper. However, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to configure the analyzer or an attached computer or microprocessor carry out the requisite calculations and determine a diffusion coefficient.

Applicant argues that, since Cholet discloses an analyzer for determining the permeability by using a pressure difference between the two chambers, the reference could not have provided the teaching of an analyzer for determining the diffusion coefficient. The disclosure of Cholet was used to provide the teaching, as known in the art, of automated measurement and calculation. The apparatus of Cholet is similar to the claimed apparatus, as detailed in the rejections, although the method uses a pressure differential. The disclosed automation of the apparatus and method is readily

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transferable to the apparatus and method of Drake et al. As discussed in the prior paragraph, automating manual activity to accomplish the same result involves only routine skill and would have been obvious to one of ordinary skill in the art.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 11 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Note that Claims 1 and 11 do not explicitly state that the analyzer determines a diffusion coefficient, but that the analyzer is "configured to be capable of determining an amount of detectable gas ... so as to thereby determine a diffusion coefficient." Claim 18, although worded differently, is similar. The claims seem to imply that the mere determination of an amount of detectable gas also determines the diffusion coefficient. It is not clear if the analyzer actually carries out the calculations to determine the diffusion coefficient. For the purpose of this examination, the broadest possible interpretation of the claim will be used, and the analyzer is assumed to determine the diffusion coefficient from the detectable gas measurement.

***Claim Rejections - 35 USC § 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8-15 and 18-21 rejected under 35 U.S.C. 103(a) as unpatentable over Drake et al ( "On a Cell to Measure Diffusion Coefficients of Gases Through Cigarette Papers", Int. J. Heat and Mass Transfer, 23 (1980) 127-134).

Drake et al describe a procedure and apparatus adapted to direct measurement of cigarette wrapping paper diffusion coefficients (p 127, Introduction). The apparatus comprises a two-chambered cell with the wrapping paper placed between and separating the two cells (the two chambers engaging at and defining a sampling area). Cells of a selected length can be used to expose the desired length of paper (i.e.-a length entirely within the width of a band) to analysis gas streams. An inert gas stream (nitrogen) flows through one chamber (first chamber), measured by a flow meter, and a gas stream comprising a detectable gas (CO) flows through the second chamber, also measured by a flow meter. Mass flow rates of gases through each chamber are the same, therefore they are inherently regulated or, at least, it would have been obvious to one of ordinary skill in the art to regulate the flows to maintain equal rates.. An analyzer device receives the flow of exit gases from each chamber to determine the steady state concentration (equilibrium flow) of the detectable gas from each chamber is measured

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by an infra-red analyzer (pp 127-128, Description of Cell). Because the first chamber is swept by the inert gas, the exit gases will include any detectable gas entering the first chamber through the cigarette wrapping paper. There is always a zero pressure difference across the paper between the two chambers, thus the gas in the first and second chambers has a substantially equal pressure.

Regarding Claims 1, 7, 11 and 18, Drake et al does not disclose that the determination of the diffusion coefficient is done by the analyzer. However, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to configure the analyzer or an attached computer or microprocessor carry out the requisite calculations and determine a the diffusion coefficient, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192.

Note that Claims 1 and 7 are directed to an apparatus adapted to measure a property of a cigarette paper. The method of determination of a diffusion coefficient does not alter the structure of or provide further patentable limitation to the claimed apparatus.

Drake et al does not describe a paper having bands of differing properties. Drake et al also does not disclose that the paper is supplied on a roll or that an advancement device is used to advance the paper through the sampling device. Drake further does not describe use of a harmless gas as the detectable gas. However, banded wrappers are well known in the art, the bands typically provided in the paper to

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control the burn rate of a cigarette (see Allen et al, EP-0486213 A1, p 2, col 1, lines 30-38; col 2, lines 5-11), and it would have been obvious to one of ordinary skill in the art to measure properties on alternating bands of a banded cigarette wrapping paper to determine porosity characteristics related to the burn rate of a wrapper. The paper after manufacture is typically rolled, thus it would have been obvious to supply the test paper from a roll and, for the reasons given above with respect to automation, to provide an advancement device for feeding the paper into the sampling device. It would have been obvious to use cells of a length such that the area analyzed is entirely within the width of a band so that the properties of the alternating bands could be measured. It would also have been obvious to use a harmless detectable gas that could be released to the atmosphere as a functionally equivalent option to simplify waste handling.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drake et al in view of Cholet (WO 03/019132 A1, US 2004/0187560 used for English translation).

The measurement apparatus and method of Drake et al have been described above. Drake et al does not disclose control of the advancement device or of the analyzer via sensors. Drake et al also does not disclose configuring the analyzer to determine the diffusion coefficient of the paper with respect to the detectable gas.

Cholet discloses an automated apparatus and method for determining the permeability of a porous material having alternating porosity levels. The porous material can be a cigarette wrapping paper with bands of alternating porosity. An

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example paper is indicated as that disclosed by Allen et al, EP-0486213 (Abs; p 1, pars 1-2; p 2, par 27). The measurement apparatus comprises two chambers that engage at opposite sides of a sample paper and define a sample area that is smaller than the dimensions of the bands in the paper (p 1, pars 3-6; p 2, par 30). The supplied gas and pressure or vacuum in the two chambers can be regulated using flow meters. One chamber is connected to a measurement circuit (p 2, par 29). The measurement process is automated, with an advancement device (stepping motor and drive rollers) advancing the paper and the measurement device actuated after each advancement to make a measurement. Based on a series of measurements, the future action of the advancement device is determined and controlled. An attached processor performs calculations and controls the stepper motor. (p 1, pars 10-14; p 2, pars 31-44; Claim 7).

The art of Drake et al, Cholet and the instant invention is analogous as pertaining to the measurement of cigarette paper properties via a two chambered controlled gas flow apparatus having a gas analyzer. It would have been obvious to one of ordinary skill in the art to automate the diffusion measurements of Drake et al in view of Cholin to provide more data with less expenditure of time or money. For reasons given above, it would also have been obvious to program the analyzer or attached processor to perform the calculations to provide the data in final usable form.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.



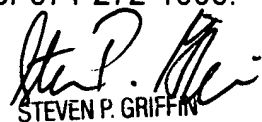
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



DRC

  
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